

**EXHIBIT IV**



**SOLID STATE AND STRUCTURAL CHEMISTRY UNIT**  
(A UGC CENTRE FOR ADVANCED STUDY)

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Professor T. N. Guru Row  
Chairman

Dec 9, 2004

Dr. T. Rajamannar  
SPARC, Vadodara

Dear Dr. Rajamannar,

**Sub: Polymorphism in Tiagabine anhydrous**

The sample 7022/F/630/12 gives a poor quality XRD (high noise) and hence indexing and profile refinements are difficult to do in this case. However sample PN 41162 is the same as the above sample, but the crystallinity and hence the quality is better. We have indexed sample PN 41162 uniquely and have also done a profile refinement of the same and the results are already sent to you. Based on our observations the unit cell is different from that of the sample 7022/F/641/06E (which also is identical to the one reported in the literature). We have already sent the indexing details, profile refinement plots etc. on 06E sample to you.

We suggest that profile refinements are going to be the key inputs in case of compounds showing almost similar patterns, but index differently. Since, Profiles represent a mathematical fit to the pattern the reliability will be much higher and in case of peaks which do not fit, it could be concluded that they are either impurity peaks or they belong to yet another phase.

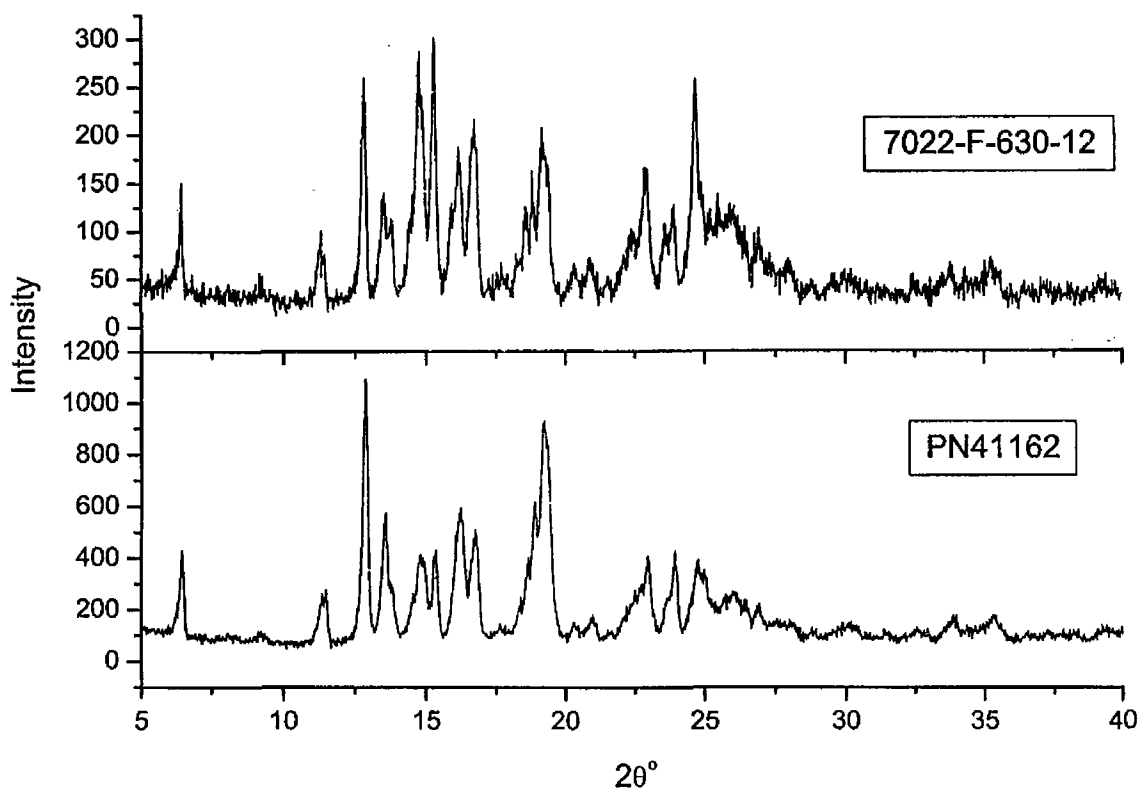
In the present analysis, we have shown that the sample PN 41162 is indexed based on an entirely different triclinic unit cell than 06E. Further, pattern decomposition followed by profile analysis have shown that the two powder samples are indeed different and belong to two separate phases. This proves beyond an doubt that the sample PN 41162 is a single phase compound and is a new polymorph of Tiagabine anhydrous.

With best regards

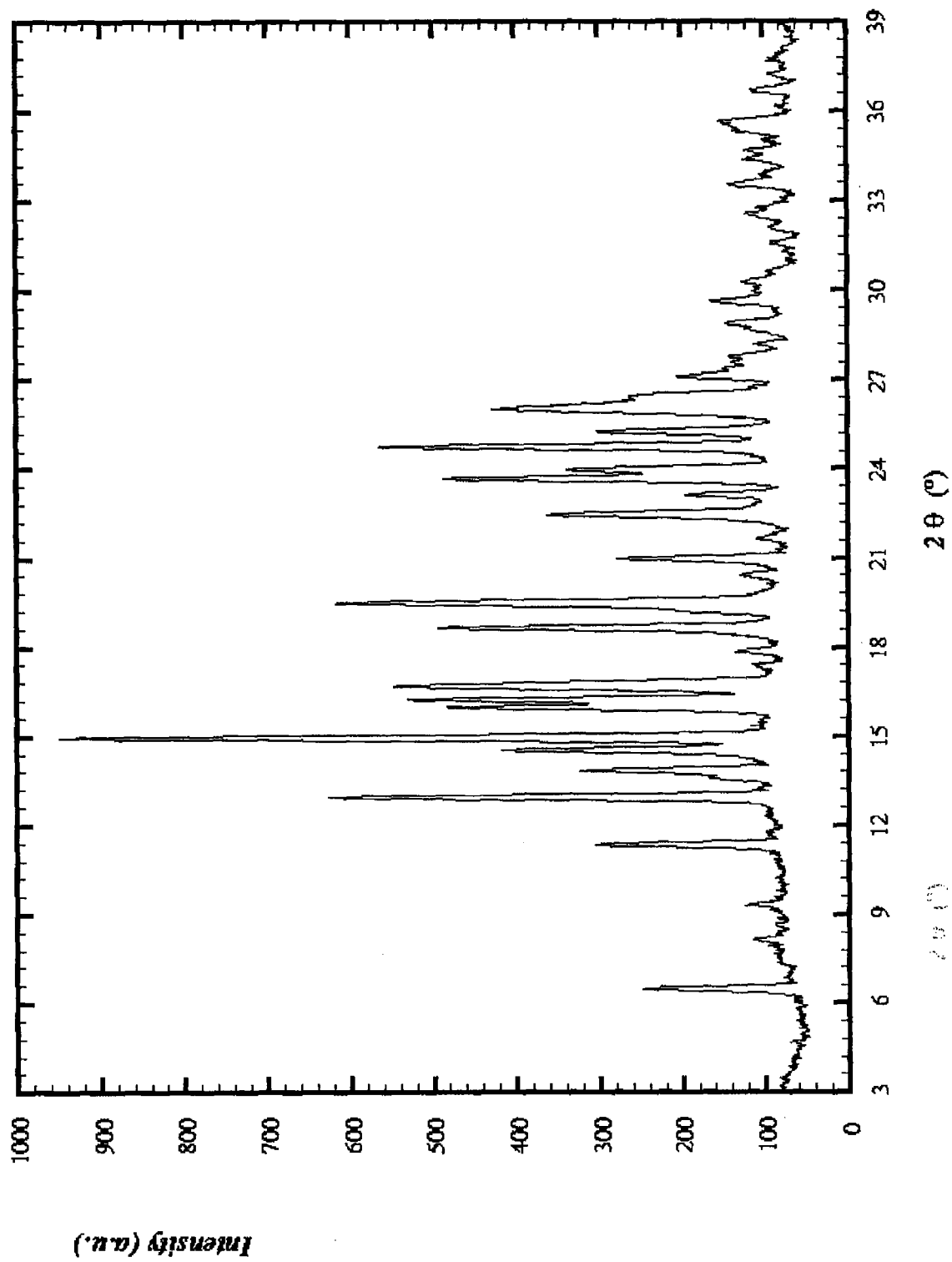
*T. N. Guru Row*  
(Guru Row)

### Comparison of 7022-F-630-12 and PN41162

The quality of the sample 7022-F-630-12 as can be seen from the XRD pattern is not as good as that of PN41162. The signal to noise ratio suggests that the latter is better suited for profile analysis. For all other practical purposes the two samples can be considered similar.



7022-F-641-06E



7022-F-630-12

